

GOVERNMENT/INDUSTRY AERONAUTICAL CHARTING FORUM
Instrument Procedures Group
May 4-5, 1998
HISTORY RECORD

FAA Control # 98-01-197

SUBJECT: Air Carrier Compliance with FAA-specified Climb Gradients

BACKGROUND/DISCUSSION: Unlike balanced runway and takeoff engine failure computations, air carriers are not required by the FAA to provide flight crews with performance data to determine whether an a normally operating aircraft can make good the climb gradient specified on an instrument departure procedure. Not only do crews need these data in a form that can easily be used just prior to departure, the crews need to know the optimum flight profile to be used to assure that the presumed performance is achieved during the departure procedure.

In many cases, air carrier aircraft performance is sufficiently robust as to implicitly assure that specified climb gradients are exceeded simply by flying the nominal departure profile. But, this assumption is not valid at terrain-critical locales, where steep gradients must be maintained for several thousand vertical feet. Unless the FAA mandates an objective, valid performance-calculation program for air carriers, sooner or later a CFIT accident will occur at a mountain airport, which could have been prevented had a requirement been in place to assure compliance with the specified climb gradient under actual density altitude and aircraft takeoff weight conditions.

RECOMMENDATION: ALPA met with AFS-200, 400 and AGC-200 August 5, 1997, and set forth this issue. The FAA thus far has failed to respond to ALPA's legitimate safety-of-flight concerns. On January 6, ALPA requested a legal interpretation on the matter of climb gradients, a copy of which is attached to this agenda item. AFS-200 should act immediately to require certificate holders to provide flight crews with climb-gradient-performance calculation tools, including the required flight profiles for a given departure procedure.

COMMENTS: This affects the standard operations specifications and directive/training material provided to air carrier flight crews.

Submitted by Captain Tom Young, Chairman
Charting and Instrument Procedures Committee
AIR LINE PILOTS ASSOCIATION
PH: (703) 689-4176
FAX: (703) 689-4370
April 22, 1998

attachment

January 6, 1998

Mr. Nicholas Garaufis
Office of the Chief Counsel, AGC-1
Federal Aviation Administration
800 Independence Avenue, SW
Washington, DC 20591

Subject: Request for Legal Interpretation

Dear Mr. Garaufis:

The Air Line Pilots Association is requesting that you provide us with a legal interpretation about whether air carrier operators (operating under either 14 CFR Parts 121 or 135) are required to assure that aircraft taking off and departing an airport under Instrument Flight Rules (IFR) can comply with climb gradients set forth in published IFR departure procedures or standard instrument departure procedures (SID). Further, we need you to clarify your November 30, 1993, legal interpretation that indicates that a published IFR departure procedure must always be used by a pilot under Part 121 or 135, even where a SID exists for the airport and such a SID is assigned by ATC to a departing air carrier aircraft.

In your letter of legal interpretation to Mr. McBride and Mr. Birdsong, dated November 30, 1993, you set forth the absolute requirement for 14 CFR 121/135 operators to use published IFR departure procedures, and we quote:

"Under Part 121 or Part 135, a pilot is required to follow any published IFR departure procedure regardless of whether the flight is conducted under VMC or under IMC."

Many IFR departure procedures and SIDs contain specified climb gradients in addition to a specific flight track. A few examples are:

- 1. Reno, Nevada (KRNO) IFR departure procedure for Runway 16L: Minimum climb gradient of 510 feet per nautical mile to 8,500 feet, msl. (4,095-foot altitude gain required with specified climb gradient.) Aircraft that can make good the specified climb gradient are authorized standard (and by operations specifications, lower-than-standard) takeoff minimums. Aircraft that cannot make good the specified climb gradient are required to have a takeoff weather condition of not less than a ceiling of 3,600, visibility 2 miles.*
- 2. Eagle, Colorado (KEGE) IFR departure procedure for Runway 25: Minimum climb gradient of 750 feet per nautical mile to 11,200 feet, msl. (4,744-foot altitude gain required with specified climb gradient.) Aircraft that can make good the specified climb gradient are required to have a takeoff weather condition not less than a ceiling of 1,700, visibility 3 miles. Aircraft that cannot make good the specified climb gradient are required to have a takeoff weather condition not less than a ceiling of 5,300, visibility 3 miles.*
- 3. Los Angeles, California (KLAX) GABRE SID for Runways 6L/R and 7L/R: Minimum climb gradient of 330 feet per nautical mile to 12,000 feet, msl. (Approximate 11,900-foot altitude gain required with specified climb gradient for*

all referenced runways.) There are no alternative takeoff minimums on this SID for aircraft that cannot make good the specified climb gradient.

In Example 3, the climb gradient is mandatory without exception, because the departure is a SID. Most SIDs do not have alternative takeoff minimums without climb gradient.

Examples 1 and 2 are IFR departure procedures, with alternative high weather minimums for aircraft that cannot comply with the specified climb gradient. However, the FAA has never provided guidance to the aviation community about how to avoid controlled flight into terrain (CFIT) at mountain-area airports where a specified climb gradient cannot be complied with. In any case, the air carriers presume that their pilots will depart with the lowest possible takeoff minimums. Thus, for both the CFIT and economics-of-operations issue, the higher minimums are for all practical purposes useless.

14 CFR, Parts 121.189 and 135.379, require FAR 121 and 135 operators, dispatch departments and pilots to calculate the aircraft's performance capabilities to comply with a narrow, hypothetical takeoff flight path which is 600 feet wide, and extends to the point where the aircraft reaches 1,500 feet above departure end runway elevation. Pilots are provided with the necessary aircraft performance data to compute this takeoff flight path, which terminates once the aircraft has gained 1,500 feet of altitude, well short of the 11,900' at LAX in the example above. This calculation serves to determine whether sufficient runway is available for takeoff, whether the aircraft can safely abort the takeoff in event of an engine failure below the critical engine failure speed, and whether the aircraft can make good the 14 CFR 25-defined takeoff flight path to 1,500 feet, in the event of an engine failure. Further, flight crews are trained at every recurrent and proficiency training session on the correct power settings and flight profile to be used to assure that the assumed performance data will assure compliance with the 14 CFR25-defined takeoff flight path to 1,500 feet of altitude gain.

There is not, however, any FAA regulatory requirement or other FAA air-carrier-oversight function requirement that operators, dispatch departments, or pilots determine whether aircraft performance capabilities exist to comply with sustained climb gradients well above a 1,500-foot altitude gain, even with the normal operating condition of all engines operating. Further, there is no training or instruction given to flight crews about the required power settings and vertical flight profiles required to achieve climb gradients for several thousands of vertical feet, such as set forth in our three examples earlier in this letter.

Our specific questions are:

- 1. Are climb gradients published in IFR departure procedures and SIDs merely guidelines, or is adherence to them mandatory when either a SID is assigned or an IFR departure procedure is used?*
- 2. If adherence to such climb gradients is mandatory, are air carrier operators and flight dispatch departments required to provide flight crews with airport and runway-specific performance data and required vertical flight profiles to be flown to assure making good the specified climb gradient for each particular IFR departure procedure or SID to be used, assuming all engines operating?*
- 3. Absent the air carrier providing flight crews with airport and runway-specific performance data and required vertical flight profiles to be flown to assure*

making good the specified climb gradient for each particular IFR departure procedure or SID to be used, what is the FAA-approved departure flight maneuver that will assure legal compliance with an IFR departure procedure's or SID's specified climb gradient?

4. *If an operator or pilot elects to use a higher-than-standard takeoff ceiling and visibility minimum as an alternative to an IFR departure procedure's specified climb gradient, what is the FAA-approved maneuver required to assure legal compliance with the higher minimum?*
5. *In view of the seemingly absolute mandatory language of your November 30, 1993, letter of legal interpretation, is it legal for a Part 121 or 135 pilot to use an ATC-assigned SID instead of a published IFR departure procedure for an airport that has both SIDs and a published IFR departure procedure?*

Thank you for your consideration of our request for these legal interpretations and related information.

Sincerely,

*Tom Young, Chairman
Charting and Instrument Procedures
Committee*

TY:amr

*cc: P. Lane, AGC-230
Q. Smith, AFS-200*

INITIAL DISCUSSION (Meeting 98-01): This issue was presented by Tom Young on behalf of ALPA. They expressed concern that air carriers are not required by the FAA to provide flight crews with performance data to determine whether a normally operating aircraft can make good a climb gradient specified on an instrument departure procedure. ALPA had previously requested a legal interpretation of this issue and provided a copy of their request to the group. ALPA believes this affects the standard operations and specifications and directive/training material provided to flight crews. ALPA also believes this to be a potential CFTI issue and cited examples of situations at Minneapolis. Paul Smith, NBAA, stated that this should not be an ACF issue. Bob Wright, AFS-400, suggested the issue be brought before a FAA safety commission. Item to be held over pending assignment of an OPI. Howard Swancy (AFS-420) has initially taken the issue to AFS-200 (Dave Cady) as a possible FSIB item. **Action: AFS-420.**

MEETING 98-02: Howard Swancy, co-chair, proposed a meeting with AFS-420, AFS-200, ALPA and AGG to address this issue. Tom Young, ALPA, briefed that there was an FAA/AFS-400 commitment made during a meeting on August 5, 1997. Tom also emphasized AFS-200 participation. Kevin Comstock, ALPA, stated that he had spoken with AFS-200 and they don't believe this is a problem on public procedures and is handled on a case-by-case basis on special procedures. AFS-200 is working on a FSIB; however, it is

not mature enough to circulate for comment. It has also being worked as a low priority item. In short, no action has been taken to resolve this issue. **Action: AFS-200.**

MEETING 99-01: Jim Gardner, AFS-200 briefed that no action has been taken on this issue due to personnel constraints and changes. Tom Young, ALPA, re- briefed their concern and offered to meet with AFS-200 to re-emphasize the problem and to volunteer industry assistance in the solution. AFS-200 agreed to more aggressively work the issue with ALPA input. **Action: AFS-200.**

MEETING 99-02: An AFS-200 representative was not available to address this issue. Will Swank, AFS-200, was in attendance for the P-56 airspace issue and was tasked to request the AFS-200 representative assigned this issue to forward a status update on initiatives thus far for inclusion in the minutes. He agreed to convey the message. Wally Roberts, ALPA, briefed that his organization has sent a letter to a higher level expressing concern that the issue is not being actively pursued. **Action: AFS-200.**

MEETING 00-01: Will Swank, AFS-200, reported that the AFS-200 specialist assigned this issue was transferred and that no action has been taken. He stated that AFS-200 agrees with the importance of the issue as presented; however, staffing constraints have precluded action. Kevin Comstock, ALPA, is still working their organization internally to assess impact on their customers. **Action: AFS-200.**

MEETING 00-02: An AFS-200 representative was not present to discuss the issue. Discussion is continued to the next meeting. **Action: AFS-200.**

MEETING 01-01: An AFS-200 representative was not present to discuss the issue. Discussion is continued to the next meeting. **Action: AFS-200.**

MEETING 01-02: An AFS-200 representative was not present to discuss the issue. Discussion is continued to the next meeting. **Action: AFS-200.**

MEETING 02-01: Jim Gardner, AFS-200, responded to the issue and was provided an update by Wally Roberts, ALPA. Wally re-stated that the FAA has no requirement for operators to provide performance data to be in the cockpit. Jim provided a short briefing on POI requirements and procedures for Part 121/135 operators and stated that AFS-200 has had no time or resources to address this particular issue. Wally briefed that ALPA had also raised the issue with FAA's General Council in 1998, but has received no response. Jim suggested that ALPA follow up that correspondence which could elevate the issue in AFS-200. Wally agreed to do so. **Action: ALPA & AFS-200.**

MEETING 02-02: Dave Kountz, a newly assigned specialist on detail from the Pittsburgh FSDO to AFS-220, stated that he will pursue the issue. He will attempt to prod AGC for a response to the ALPA letter of 1998. Dave is also an assistant POI for US Airways and will use this position to also try to determine the actual impact on air carriers. It is also recommended that ALPA continue to follow up their AGC letter for response.

ACTION: AFS-220 and ALPA.

MEETING 03-01: There was no AFS-200 representative at the meeting to update the issue. ALPA has had no further success in getting a response from AGC-200. Status unchanged.

ACTION: AFS-220 and ALPA.

MEETING 03-02: There is no change in status. An AFS-200 representative was not present to discuss the issue, nor did AFS-200 provide a response for an update to the ACF-IPG chair. Mark Ingram, ALPA, noted that ALPA did not send a follow up letter to AGC as recommended at the last meeting. Bill Hammett, AFS-420 (ISI), stated that it is apparent that the ACF is powerless to get response from AGC and AFS—200. The issue has been on the table for over 5 years without action. Bill again requested that ALPA review the importance of the issue. If deemed important, then ALPA should re-send their letter to AGC. Bill also agreed to draft a letter for the ACF-IPG chair to send to AFS-1 requesting that AFS-200 participate in ACG meetings on a full time basis. **ACTION: ACF-IPG Chair & ALPA.**

MEETING 04-01: Jerry Ostronic, AFS-220, apologized for past lack of support from AFS-200 on resolving this issue. They appreciate the significance of the issue; however, staffing constraints precluded action. He briefed that he has recently contacted AGC regarding this subject and they hope to have a response to the ALPA letter by the end of May. His office is also looking for possible solutions in Part 121.97 and pilot-in-command actions at special airports. He requested more specifics; e.g. airports, procedures, and what aircraft may be affected. Kevin Comstock, ALPA, responded that the problem exists at all airports with a climb gradient required departure. Kevin Jones, Southwest Pilots Assn., offered the LOOP 4 SID out of LAX as a classic example. Mark Ingram, ALPA, added that the only solution is that it must be a dispatch requirement to advise aircrews what actions are necessary to meet a required climb gradient. Jerry responded that there are several ways to address the problem; e.g., reduce weight, increase thrust, etc. Mark asked if it was a legal requirement to meet published climb gradients. Jerry responded that AGC is currently addressing that question. The bottom line is that AFS-200 can't mandate what is not regulatory. The first step is to get an AGC opinion. If AGC responds yes, AFS-200 will implement the requirement. If the response is no, rulemaking action will be required. Jerry will continue to work the issue and report at the next meeting. Tom Schneider, AFS-420 thanked Jerry for representing AFS-200 and recommended they continue to be active ACF-IPG participants. **ACTION: AFS-220.**

MEETING 04-02: Tom Schneider, AFS-420, briefed that Jerry Ostronic, AFS-220, was unable to attend the meeting due to travel requirements. However, Jerry did provide a written status report on the issue, a copy of which follows:

October 19, 2004

Mr. Thomas E. Schnedier
Chair Aeronautical Charting Forum
Instrument Procedures Group

Please extend to your group my regrets for not being able to participate in this session of the group's meetings. What your group does is very important to aviation safety and is greatly appreciated by the Air Transportation Division. Unfortunately I have not mastered how to be in multiple places at the same time. During your meeting I will be overseas working on operational issues with the implementation of the Airbus A380.

I wanted to bring you and the group up to date on my efforts on the climb gradient flight crew information issue since our last meeting in April.

As you know rulemaking is a long process that can take several years depending on the priority of the project. In reviewing aircraft accident statistics we were unable to identify a significant accident that was a direct result of the flight crew not having gross climb gradient information available to them at departure. Without this sort of statistical information we did not feel we could elevate a rulemaking project on this issue to the priority level that would have it acted on quickly. We worked through existing regulation in an effort to find a section that may provide the FAA the latitude to levy this requirement on air carrier operators. In verbal discussions with our legal group we identified the possibility of this latitude under CFR Parts 121.117 and 121.97. We developed the guidance material and policy for implementing these requirements for air carrier operations under Part 121. After several renditions this material gained acceptance by all the branches within the Air Transportation Division.

This draft document was then provided to our legal council for their concurrence that the FAA has the legal authority to require this information be supplied to the flight crews by the operator. This legal review is the typical process when flight standards establishes regulatory policy.

I learned just this morning, from more senior legal council, that the current verbiage in Parts 121.117 and 121.97, and the preamble to those regulations does not support our proposed policy and guidance on requiring air carrier operators to supply gross climb performance information to their flight crews.

Unfortunately this takes us back to where we were at our April meeting. The recommendation from legal council, and my superiors, is to have the group, or members of the group, petition the FAA for rulemaking under CFR Part 11. Although our primary focus for policy and guidance material was operations under Part 121 many other types of operations may benefit from a rule changes to provide this information. The petition for rulemaking could include all the applicable rules for the various sections of the regulations to cover all types of operations or possibly a change to CFR Part 91 Subpart B, which would probably accomplish the same objective.

I am sorry I do not have more encouraging information to pass along at this time. I hope and trust you will have a productive meeting and look forward to working with you at the next meeting.

Sincerely

Jerry Ostronic
FAA AFS-200

MEETING 04-02 (Continued): Tom read the report and a copy was provided all attendees and further discussion followed. Frank Flood, Air Canada, briefed information and provided an example table (included below) that is currently available from aircraft manufacturers. Frank provided a sample table that is included in Air Canada's Flight Operations Manuals, a copy of which is attached to this synopsis. The group consensus was that the table would be a useful tool. Mitch Scott, Continental Airlines, voiced objection to a rulemaking effort that would levy the performance requirement on dispatchers. Dispatchers would not be able to provide an immediate, real-time response to requests due to other job requirements. Mark Ingram, ALPA, requested the FAA continue to pursue a formal response from AGC. Tom Schneider, AFS-420, stated the issue would remain open with AFS-200 as OPR.
ACTION: AFS-220.

Issue 98-01-197- Status Update by Frank Flood, Air Canada

Air Canada research into this issue indicates that there are currently tables/charts available to help resolve this issue. For example, the Airbus chart below shows flap, pressuer altitude, and outside air temperature, and results is a climb gradient. This performance data from the manufacturer allows pilots and dispatchers to be proactive in meeting specified climb gradients. It can also serve as a useful tool for procedure designers and regulators in meeting their requirements.

NORMAL PACK FLOW ANTI-ICE OFF							A319-112 PERF ENG AUG 2004
ALL ENGINES CLIMB GRADIENT (FT/NM)							
	AIRPORT PRESS ALT (FT ASL)	OUTSIDE AIR TEMPERATURE (°C) OR FLEX TEMPERATURE (°C)					
		0	10	20	30	40	50
CONF 1	0	476	471	462	435	381	327
	1000	460	454	448	412	358	306
	2000	442	438	430	387	332	287
	3000	425	420	410	364	309	
	4000	409	405	387	340	290	
	5000	394	389	365	318	272	
	6000	378	375	344	297	263	
	7000	366	362	326	278	255	
	8000	355	348	311	265		
	9000	347	335	294	256		
CONF 3	0	471	465	460	432	378	325
	1000	455	450	442	408	354	309
	2000	437	431	425	383	329	302
	3000	421	415	406	361	308	
	4000	405	401	384	338	300	
	5000	392	387	365	318	286	
	6000	385	381	352	305	277	
	7000	377	373	338	289	269	
	8000	369	362	323	278		
	9000	360	347	307	268		

ASSUMPTIONS:

- NO WIND
- 1500 FT THRUST REDUCTION ALTITUDE
- GOOD FOR ALL WEIGHTS UP TO 70000 KGS

Presented by: Captain Frank Flood

Organization: Air Canada

Phone: 905-676-4300 ext 6430

Fax: 905-676-2252

E-mail: frank.flood@aircanada.ca

MEETING 05-01: Jerry Ostronic, AFS-220, briefed that he has been continuing a dialog with FAA's Office of General Council (AGC). AGC initially did not want to pursue levying the climb gradient (CG) requirement through the rulemaking and public comment process. However, they are now re-thinking the issue and considering issuing a policy memorandum. Although this would also require a public comment period, it may be an easier solution than the rulemaking process. He also advised that AGC is more aggressively working a response to the ALPA letter of January 1998; it is still under discussion. Mark Ingram, ALPA, clarified the ALPA concern that high CGs are not being evaluated by dispatch. A discussion ensued regarding very high ATC required climb gradients. **ACTION: AFS-220.**

MEETING 05-02: Jerry Ostronic, AFS-220, briefed that the issue is still being worked. In addition to requesting carriers to provide climb performance data in the cockpit, it also asked for a determination of which climb gradient was applicable when there were differences between the Obstacle Departure Procedure gradient and a gradient on a SID. Jerry stated that he has asked the NTFG to review these procedures and resolve differences. Bill Hammett, AFS-420 (ISI) noted that as a result of previous ACF discussions, policy has been written in Order 8260.46, *Departure Procedure Program*, to require all information applicable to a graphic DP, either ODP or SID, to be published on the chart. There should be no need for a pilot to refer to different pages to ascertain what climb gradient or takeoff minimums are applicable to a given procedure. Jerry noted that while this is true, not all locations have been updated. He further noted that if rulemaking was required, then it would require priority and funding. Jerry also stated that there is not a unanimous opinion within AFS and AGC on how to proceed. Mark Ingram, ALPA, questioned the timetable for a decision. Jerry responded that there was none. **ACTION: AFS-220.**

MEETING 06-01: Mark Ingram, ALPA, briefed that an AGC response to their follow-up letter was received on January 13, 2006. The response regarding the climb gradient (CG) validated there is no requirement for carriers to provide CG data to aircrews. Therefore, if ALPA desires to pursue the issue, then ALPA must initiate rulemaking under 14 CFR Part 11. In regard to Part 121/135 pilots flying an ODP or a SID, AGC ruled that a pilot could fly either procedure and be in compliance with the rule. However, if assigned a SID, the pilot may not fly the ODP unless receiving an amended ATC clearance as required by Part 91.123. Rich Boll, NBAA, stated that corporate pilots face the same lack of performance data. Vince Massimi, MITRE, noted that Part 121.189 requires engine out performance parameters, it seems logical that similar data would be required for Part 97 procedures. Bill Hammett, AFS-420 (ISI), asked whether the AGC response satisfied the issue as it stands before the ACF, recommending that if ALPA decides to request rulemaking; that would be an ALPA prerogative outside the ACF. Kevin Comstock, ALPA, responded that ALPA has not decided whether to pursue rulemaking. He also noted that AGC only responded to two of ALPA's original five questions. Kevin requested the issue remain open until ALPA decides their next course of action. He also stated that he thought the request for rulemaking would have more weight if presented from within FAA, e.g. AFS-200. Bill suggested that ALPA follow up with a request for an opinion to the remaining three questions while they have AGC's attention. Copies of the ALPA letter and the AGC response are included below. **ACTION: ALPA.**



AIR LINE PILOTS ASSOCIATION, INTERNATIONAL

535 HERNDON PARKWAY □ P.O. BOX 1169 □ HERNDON, VIRGINIA 20172-1169 □ 703-689-2270
888-FLY ALPA (888-359-2572) □ FAX 703-689-4370

December 30, 2005

Mr. Andrew B. Steinberg,
Office of the Chief Counsel, AGC-1
Federal Aviation Administration
800 Independence Ave., S.W.
Washington, DC 20591

Subject: Status of 1998 Request for Legal Interpretation

Dear Mr. Steinberg,

The Air Line Pilots Association, International (ALPA) represents over 63,000 cockpit crewmembers at 40 airlines in the U.S. and Canada. We are writing to obtain the status of a request for legal interpretation we submitted to your office nearly eight years ago, on January 6, 1998 (attached), to which the FAA has not responded.

Since 1998 the Government/Industry Aeronautical Charting Forum (ACF), established by FAA Order 7910.5, has had an open agenda item on charted climb gradients. This agenda item is in reference to air carriers not providing pilots with performance data to determine if their aircraft can comply with charted climb gradients on departures based on current loading and atmospheric conditions. Flight Standards has stated that based on current regulations they have been unable to establish a requirement for air carriers to provide data to pilots that would help them determine if they can comply with charted climb gradients. Flight Standards has also said that depending on the response from AGC to our request for legal interpretation, they may at that time be able to institute such a requirement.

The request for legal interpretation has to do with non-standard climb gradients that are published on some departure procedures for use in normal operations (i.e. all engines operating). In order for pilots to determine if they can comply with these restrictions on the chart, pilots must be provided performance data. Pilots are not currently given the data to determine if their aircraft can comply.

Please note that our concern is not addressed by the use of engine-out procedures. Airlines provide data in the form of what track to fly for use in the event of an engine failure. However, this engine failure flight track is typically different than the normal

departures and in no way assist the pilot in determining compliance with meeting climb gradient requirements on the normal departures.

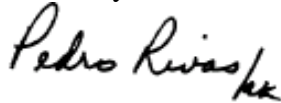
In ALPA's view, data that can be used by pilots to determine the ability to comply with normal departure procedure climb gradients is necessary to ensure that these procedures can be executed as charted.

Subsequent to our original request, we have made numerous phone calls attempting to resolve the apparent contradiction of pilots being required to verify performance but not being given the data with which to do so. In addition to those phone calls, we have faxed the original request two additional times at AGC-220's request. These faxes were sent on March 1, 1999 and June 29, 2001.

The complete history of discussions at the ACF on this item can be found by going to http://www.faa.gov/about/office_org/headquarters_offices/avs/offices/afs/afs400/afs420/acfipg/open/ and selecting item 98-01-197.

Please provide us with a status to our request for legal interpretation. If you have any questions please contact Kevin Comstock at 703-689-4176.

Sincerely,

A handwritten signature in black ink that reads "Pedro Rivas" followed by a stylized flourish.

Captain Pedro Rivas,
Director, Charting & Instrument Procedures

cc: Mr. Nicholas Sabatini, AVS-1
Mr. Thomas Toula, AFS-200
Mr. John McGraw, AFS-400



U.S. Department
of Transportation
**Federal Aviation
Administration**

800 Independence Ave., S.W.
Washington, D.C. 20591

January 13, 2006

Captain Pedro Rivas
Director, Charting and Instrument Procedures Committee
Air Line Pilots Association, International
535 Herndon Parkway
Post Office Box 1169
Herndon, VA 20172

RE: Climb Gradient Information for Air Carrier Pilots

Dear Captain Rivas,

We received a copy of your letter requesting a legal interpretation of the Federal Aviation Regulations. In summary, you asked:

1. whether an air carrier operating in accordance with parts 121 or 135 is required to provide flight crewmembers with data necessary to assure that an aircraft can comply with the climb gradients specified in published instrument flight rules (IFR) departure procedures and standard instrument departure (SID) procedures; and
2. whether pilots operating under parts 121 or 135 are required to follow a published IFR departure procedure even when Air Traffic Control (ATC) assigns a SID to a departing aircraft.

First, please accept our apologies for the delay in issuing a response to your inquiry. As you are aware, the FAA has been working internally and with the Government/Industry Aeronautical Charting Forum (Forum) on this issue. We appreciate your efforts in resolving this aviation safety matter.

Regarding the first issue, there is presently no requirement in the Federal Aviation Regulations mandating air carriers or commercial operators to provide climb gradient data to flight crewmembers. Therefore, it would be necessary for the FAA to conduct rulemaking proceedings in order to impose this requirement. Section 5 of the Administrative Procedure Act defines rulemaking as the agency process for formulating, amending, or repealing a rule.¹ FAA rules are subject to public notice and comment prior

¹ 5 U.S.C. § 551 (2004).

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to implementation. You may file a petition for rulemaking in accordance with 14 C.F.R. part 11.

Your second area of concern involved the requirement for pilots to follow published IFR departure procedures. Specifically, you asked which procedure a pilot should follow if ATC issues a SID that differs from the published IFR departure procedure for a particular airport.

As an initial matter, it is helpful to clarify that a “published IFR departure procedure” may be a SID developed for ATC purposes or an obstacle departure procedure (ODP) developed for obstacle clearance purposes. ODPs are developed by the Aviation System Standards Division (AVN) within the FAA Flight Standards Service.² According to Flight Standards, ATC historically developed SIDs for purposes of expediting air traffic and maintaining aircraft separation. SIDs did not contain an assessment for obstacle clearance beyond the first en route navigational fix. Instead, the obstacle assessment along the SID route was terminated at the first en route airway fix even if the SID procedure had transition routes beyond that point. The SIDs contained a standard 200 feet per nautical mile climb gradient that provided obstacle clearance for most airports. Procedures requiring greater climb gradients were specifically tested and documented in the Terminal Procedures Publication as part of the procedure. Therefore, flight crews are provided with adequate obstacle clearance climb gradients, even when using a SID developed by ATC.

In recent years, AVN and ATC began developing ODPs that establish climb gradients for obstacle clearance beyond the first en route navigational fix. All airports with instrument approach procedures are assessed to determine if an ODP should be published. ODPs are published for airports with a required climb gradient of more than 200 feet per nautical mile for obstacle clearance. The ODPs are valid for all directions of flight unless otherwise stated in the ODP.

According to your letter, the question regarding which procedure a pilot must follow stems from FAA Interpretation 1993-30.³ In that interpretation, the FAA stated that part 121 or 135 operators are required to follow “any published IFR departure procedure” regardless of the weather conditions. A SID issued by ATC and an ODP developed by AVN are both “published IFR departure procedures.” Therefore, it is consistent with the 1993 interpretation and regulatory requirements for an operator to comply with either procedure. The pilot in command (PIC) has the authority to determine which procedure is most appropriate based on the circumstances of the flight. However, if the PIC desires

² The FAA also notes that more restrictive departure procedures may be imposed on an air carrier via Operations Specifications. A carrier must always comply with the more restrictive procedures mandated by the Operations Specifications unless an emergency exists or the deviation is in response to a traffic alert and collision avoidance system resolution advisory. If a more restrictive procedure is mandated by the Operation Specifications, the pilot in command must seek an amended clearance from air traffic control. See 14 C.F.R. § 91.123 (2006).

³ See Federal Aviation Decisions, published by West Publishing Company.

to use an ODP instead of the SID issued by ATC, the PIC must request an amended clearance in accordance with § 91.123.

We trust that the foregoing interpretation is responsive to your inquiry, and we apologize again for the delay in its issuance. This interpretation was prepared by the Operations Law Branch of the Office of the Chief Counsel, and coordinated with the Air Transportation and Flight Operations Divisions of the Flight Standards Service. Please contact us if we can be of further assistance.

Sincerely,

A handwritten signature in black ink, appearing to read 'Rebecca MacPherson', with a long horizontal flourish extending to the right.

Rebecca MacPherson
Assistant Chief Counsel for Regulations